# U.S.-E.U. TTF 2013 Program
## Conference Overview

### Monday April 8, 2013
<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>5:30-7:30pm</td>
<td>Dry Creek Valley Foyer</td>
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<tr>
<td>Check-in/Registration</td>
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<tr>
<td>5:30-7:30pm</td>
<td>Dry Creek Valley Ballroom &amp; Knights Valley Garden</td>
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<tr>
<td>Welcome Reception</td>
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### Tuesday, 9 April 2013
<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>8:15am-5:30pm</td>
<td>Alexander Valley Foyer</td>
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<tr>
<td>Check-in/Registration</td>
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<tr>
<td>8:15-10:30am</td>
<td>Alexander Valley Ballroom I &amp; II</td>
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<tr>
<td>Plenary Session</td>
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<td>10:30-11:00am</td>
<td>Alexander Valley Foyer</td>
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<td>Coffee Break</td>
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<tr>
<td>11:00am-12:00pm</td>
<td>Alexander Valley Ballroom I &amp; II</td>
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<td>Plenary Session</td>
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<td>12:00-1:30pm</td>
<td>Alexander Valley Foyer</td>
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<td>Lunch</td>
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<tr>
<td>1:30-3:30pm</td>
<td>Alexander Valley Ballroom I &amp; II</td>
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<td>Plenary Session</td>
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<td>3:30-4:00pm</td>
<td>Alexander Valley Foyer</td>
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<td>Coffee Break</td>
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<td>4:00pm-5:00pm</td>
<td>Alexander Valley Ballroom I &amp; II</td>
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<td>Plenary Session</td>
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<tr>
<td>5:00-5:30pm</td>
<td>Alexander Valley Ballroom I &amp; II</td>
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<tr>
<td>Q&amp;A</td>
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<td>3:30-6:00pm</td>
<td>Alexander Valley Foyer</td>
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<td>Plenary Posters</td>
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<td>6:30-9:00pm</td>
<td>Dry Creek Valley Ballroom</td>
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### Wednesday 10 April, 2013
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<td>Plenary Session</td>
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<tr>
<td>10:00am-12:30pm</td>
<td>Alexander Valley I, Alexander Valley II, Alexander Valley III/IV, Russian River Ballroom</td>
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<td>Breakouts I</td>
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<td>Breakouts II</td>
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<td>3:30-5:30pm</td>
<td>Alexander Foyer, Dry Creek Foyer, Dry Creek Valley Ballroom</td>
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<td>Poster Session I</td>
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### Thursday April 11, 2013
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<tr>
<td>8:30am-11:30am</td>
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<td>Breakouts III</td>
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<td>11:30am-1:00pm</td>
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<td>Lunch</td>
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<tr>
<td>1:00-4:00pm</td>
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<td>Breakouts IV</td>
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<td>3:30-5:30pm</td>
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<td>Poster Session II</td>
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### Friday April 12, 2013
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<tr>
<td>8:30-10:00am</td>
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<td>Breakouts Planning</td>
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<td>10:00-10:30am</td>
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<td>Coffee Break</td>
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<td>10:30am-12:00pm</td>
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<tr>
<td>Plenary Wrap-up</td>
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**Tuesday, 9 April 2013**

Plenary Talks
Alexander Valley Ballroom I & II

- 8:15am Opening Remarks, *G. Tynan, Logistics, P. Gohil*
- 8:30am *T. Evans: Transport Physics during ELM Control*
- 9:30am *T. Leonard/R. Maingi: Edge & SOL Physics and Implications for PMI*
- 10:30am Coffee Break
- 11:00am *M. Kikuchi: Is H-mode relevant for fusion reactor - Transport, Divertor Particle and Power Handling, and Implications for Fusion?*
- 12:00pm Lunch
- 1:30pm *K. Ida: Observations of fast response of turbulence in the LHD and linkage to nonlocal transport phenomena*
- 2:30pm *H.J. Sun: Understanding the Dynamics of Cold Pulse Nonlocality Phenomena*
- 3:30pm Coffee Break
- 4:00pm *G. Dif-Pradalier: Spatial propagation of turbulence and formation of mesoscopic structures in GK simulations*

Plenary Talk Posters 3:30-6:00pm
Alexander Valley Foyer

**Wednesday, 10 April 2013**

Plenary Talk, Breakouts, Poster Session
Alexander Valley Ballroom I & II

- 8:30am W. Heidbrink, Progress in understanding fast-ion transport by instabilities
- 9:30- 10:00am Coffee Break and Transition into Breakout Sessions

Plenary Talk Posters 9:30am-12:30PM
Alexander Valley Foyer

**Breakouts-I 10:00am-12:30pm**

Edge/SOL: Inter-ELM Pedestal/L-Mode transport (Alexander Valley I)

- 10:00am *Canik - Linear edge gyrokinetic simulations of NSTX plasmas without and with lithium coated PFCs*
- 10:25am *Battaglia - Interpretive Full-f Edge Transport Calculations for DIII-D*
- 10:50am *Sauter - On the non-stiffness of L-mode transport*
- 11:15am *Davis - Mapping Alcator C-Mod's EDA H-Mode Stability Boundaries with BOUT++*
- 11:40am *LaBombard - Mirror Langmuir Probe observations of edge plasma turbulence and the Quasi-Coherent Mode in Alcator C-Mod*
- 12:05pm Discussion
Core: Impurity Transport (Alexander Valley III/IV)

10:00am  *Anne White*, "Multi-channel transport studies in Alcator C-Mod and comparisons with gyrokinetic simulations"
10:30am  *Paul Ennever*, "Gyrokinetic Simulations of Impurity Seeded Ohmic Plasmas in Alcator C-Mod and Comparisons with Experimental Measurements"
11:00am  *Walter Guttenfelder*, "Gyrokinetic predictions of momentum and impurity transport in NSTX"
11:30am  *Albert Mollen*, "Impurity transport in trapped electron mode driven turbulence in the presence of poloidal asymmetries"
12:00pm  *Gary Staebler and Lothar Schmitz*, “Discussion of impurity transport open questions"

Lunch 12:30-1:30pm

**BREAKOUTS-II  1:30-4:30pm**
Coffee Available 3:30-4:30pm Alexander Foyer

Separatrix/SOL/Divertor processes (Alexander Valley I)

1:30pm  *Fuchert* - Gas-puff imaging of blob filaments in the scrape-off layer of ASDEX Upgrade
2:00pm  *Xia* - Six-field two-fluid Simulations of Peeling-Ballooning modes using BOUT++
2:30pm  *Ahn* - Toroidal asymmetry of divertor heat flux by ELMs and 3-D effects in NSTX
3:00pm  *Labit* - Edge physics in TCV plasmas with snowflake divertor
3:30pm  Coffee Break
4:00pm  Discussion

Core- Innovative Topics & MHD Turbulence Coupling (Alexander Valley III/IV)

1:30pm  *Sara Moradi* “Micro-tearing modes in spherical and conventional tokamaks”
2:00pm  *Joshep McClengan* “Gyrokinetic particle simulation of internal kink modes”
2:30pm  *Daniel Carmody*, “Gyrokinetic Modeling of Microinstabilities in the Reversed field pinch”
3:00pm  *Olivier Sauter* “The IN-Mode in the TCV tokamak”
3:30pm  Coffee Break
4:00pm  *Lothar Schmitz and Gary Staebler*, “Discussion of core transport group research planning”

Poster Session-I  3:30-5:30pm
Alexander Foyer, Dry Creek Foyer, Dry Creek Valley Ballroom
THURSDAY 11 April 2013
Breakouts and Poster Sessions

BREAKOUTS- III 8:30-11:30am
Coffee Available 9:45-10:45am, Alexander Valley Foyer

Verification & Validation (Alexander Valley I)

8:30am  
S. Coda, “Geodesic acoustic modes: simultaneous observation of density, magnetic-field, and flow components in the TCV tokamak”

9:00am  
R. Bravenec, “Benchmarking of the Gyrokinetic Microstability Codes GYRO, GS2, and GEM”

9:30am  
S. Leerink, “Multiscale transport in ohmic FT-2 tokamak discharges”

10:00am  
Coffee break

10:30am  
S. Smith, “Validating Gyrokinetic and Gyrofluid Predictions of Electron Turbulence Fluctuations and Stiffness Near Critical Gradients”

11:00am  
Discussion

Energetic Particles (Alexander Valley II)

Session I:  
EP effects on n=1 MHD mode in tokamaks

8:30am  
Guoyong Fu: Energetic particle effects on nonresonant kink mode in Spherical Tokamaks

9:00am  
D.P. Brennan: An analysis of energetic particle driven n=1 instabilities in tokamaks with weakly reversed shear

Session II:  
Simulations of Alfven Modes in tokamaks

9:30am  
Z Lin: Nonlinear Physics of Alfven Eigenmodes and Localization of TAE in DIII-D

10:00am  
Yang Chen: Gyrokinetic Simulations of Reverse Shear Alfven Eigenmodes in DIII-D

10:30am  
Herbert Berk: Formal Basis to the TAE tip model in the time domain

11:00am  
Xin Wang: Non-uniformity effects on nonlinear wave and energetic particles

L-I-H Transition & Back Transitions (Alexander Valley III/IV)

8:30am  
Diamond, Dynamics of Stimulated and Spontaneous L-H Transitions

9:00am  
Schmitz, Limit cycles in L-H Forward/Back Transitions-Recent Experimental Progress and Open Questions

9:30am  
Cziegler, Turbulence–Zonal Flow-interaction in the I-mode and L-H transitions in Alcator C-Mod

10:00am  
Yan, The dynamics of turbulence and flow during the L-H transition

10:30am  
Muller, Turbulence and flow measurements in the X-point region during L-H transitions in ASDEX Upgrade

11:00am  
Shao, Experimental investigation of the L-I-H transition with a new dual gas puff imaging system in the EAST tokamak
3D Physics-Magnetic Islands (Russian River Valley Ballroom)

8:30am  
Waelbroeck: Effect of suppressed and fulfilled islands on magnetic confinement

9:00am  
Diamond: Role of Turbulence Dynamics in 3D Multi-Scale Physics Problems

9:30am  
Delgado: 3D effects of impurity induced MHD

10:00am  
Ida: Multi-scale turbulence and its effect on transport in helical plasmas

10:30am  
Coffee Break

11:00am  
Discussion

Lunch 11:30am-1:00pm

BREAKOUTS-IV  1:00-4:00pm (Coffee Available 3:30-4:30pm, Alexander Valley Foyer)

Electron Transport (Alexander Valley I)

1:00pm  
G. Colyer, “Variation of the heat flux with collisionality in electron scale turbulence”

1:30pm  
N. T. Howard, “Comparison of Multi-Scale Gyrokinetic Simulation with Experiment in ITG and TEM Dominated Alcator C-mode Discharges”

2:00pm  
L. Schmitz, “Electron-Ion Transport Coupling in TEM-Dominated QH-mode Plasmas”

2:30pm  
Discussion

3:30pm  
Coffee Break

Energetic Particles (Alexander Valley II)

Session III:

1:00pm  
Mike Van Zeeland: Fast Ion Loss During Applied 3D Magnetic Perturbations on DIII-D

1:30pm  
Eric Fredrickson: Parameter dependence of fast-ion redistribution events

2:00pm  
Liang Lin: Energetic-Particle-Driven Instabilities and Their Effect on Fast Ions in a Reversed Field Pinch

2:30pm  
Jonathan Koliner: Behavior of Energetic Ions in 3D Fields in a Reversed Field Pinch

Session IV:

3:00pm  
Don Spong: Recent development of gyrofluid models for energetic particle physics in tokamaks and stellarators

3:30pm  
Coffee Break

4:00pm  
Boris Breizman: Long Range Frequency Sweeping of Nonlinear Energetic Particle Modes

4:30pm  
Nikolai Gorelenkov: Validating the Critical Gradient Model for AE Fast Ion Relaxation in DII-D

5:00pm  
Discussions
Intrinsic Rotation (Alexander Valley III/IV)

1:00pm  *Reinke,*  Examination of rotation profile shape in Alcator C-Mod plasmas
1:30pm  *Fedorczak,*  On stress effects at the LCFS and effect on parallel and traversal rotation
2:00pm  *Ding,*  *Self-generated Parallel flow in MST*
2:30pm  *Cottier,*  Gyrokinetic quasilinear modeling of turbulent momentum transport
3:00pm  Discussion
3:30pm  Coffee Break

3D Physics-RMP and Magnetic Flutter (Russian River Valley Ballroom)

1:00pm  *Shafer:*  Plasma Response Measurements of Non-Axisymmetric Magnetic Perturbations on DIII-D Using Soft X-Ray Imaging
1:30pm  *McKee:*  Multi-Scale Plasma Response to 3D Magnetic Fields on DIII-D
2:00pm  *Smith:*  Evaluating 3D Magnetic Fields Induced Magnetic Flutter Transport
2:30pm  *Chang:*  Status of the theory/simulation on multiscale 3D RMP penetration and plasma transport physics
3:00pm  Discussion
3:30pm  Coffee Break

POSTER SESSION-II  3:30-5:30PM (same location as Wed.)

**FRIDAY 12 April 2013**
Breakout Wrap-up & Plenary Sessions

Breakout Session Planning Discussions 8:30-10:00am

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<thead>
<tr>
<th>Edge/SOL/Divertor Planning</th>
<th>Alexander Valley I</th>
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<tbody>
<tr>
<td>L-I-H &amp; Intrinsic Rotation Planning</td>
<td>Alexander Valley II</td>
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<tr>
<td>Core and V&amp;V Planning</td>
<td>Alexander Valley III/IV</td>
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<tr>
<td>Fast Particle Physics in 3D</td>
<td>Russian River Valley Ballroom</td>
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Coffee Break 10:00-10:30am
Alexander Valley Foyer

Plenary Wrap-up 10:30-12:00am
Alexander Valley I&II